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May 28, 2004

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APPLICATION NUMBER: 60/458,489

FILING DATE: March 28, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/09610

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS



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3-340036489-052804/107

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PROVISIONAL APPLICATION COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(c).

DOCKET NUMBER: B01075.70039
Express Mail Label No. EV 208 517 799 US
Date of Deposit: March 28, 2003

1-979 U.S. PTO
60/458489

03/28/03

INVENTOR(S)/APPLICANT(S)

LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)
Stevens-Wright Sagon	Debbie Stephen	W.	North Andover, MA Amherst, NH

☐ Additional inventors are being named on the separately numbered sheets attached hereto.

TITLE OF THE INVENTION (280 characters max)

ELECTRODE FOR ELECTROPHYSIOLOGY CATHETER HAVING AN ECCENTRIC SURFACE

CORRESPONDENCE ADDRESS

CUSTOMER NUMBER:

23628

ENCLOSED APPLICATION PARTS (check all that apply)

- ☒ Specification - Number of Pages = 8
- ☐ Drawing(s) - Number of Sheets
- ☐ Application Data Sheet, See 37 CFR 1.76
- ☒ Return receipt postcard

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

- ☒ No
- ☐ Yes, the name of the U.S., Government Agency and the Government Contract Number are:
- ☐ Other:

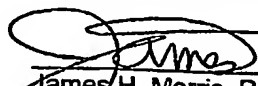
METHOD OF PAYMENT (check all that apply)

- ☒ A check is enclosed to cover the Provisional Filing Fees.
- ☐ The Commissioner is hereby authorized to charge any additional fees or credit overpayment to Deposit Account 23/2825. A duplicate of this sheet is enclosed.
- ☐ Small Entity Status is claimed.

PROVISIONAL FILING FEE AMOUNT \$ 160.00

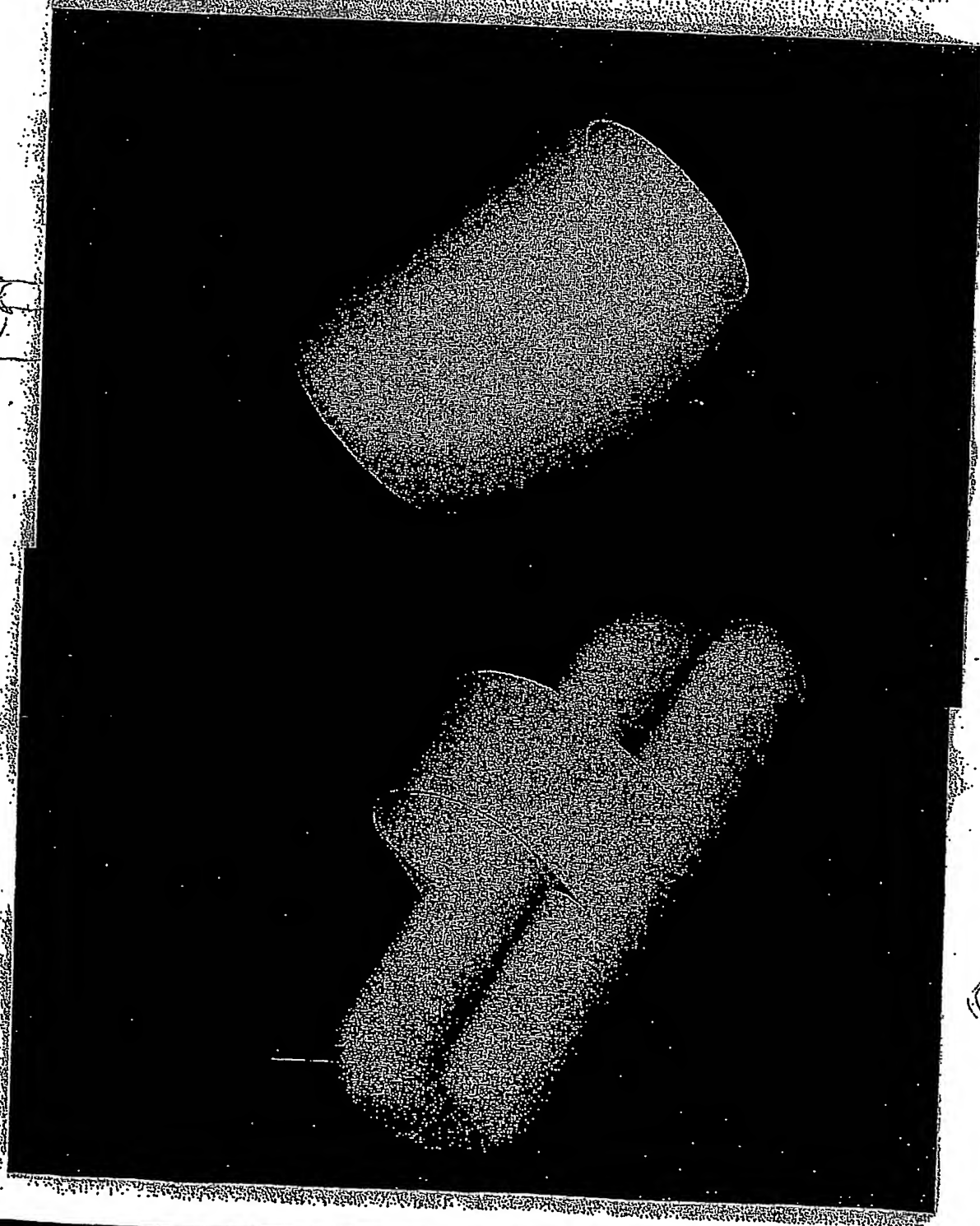
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Respectfully submitted,

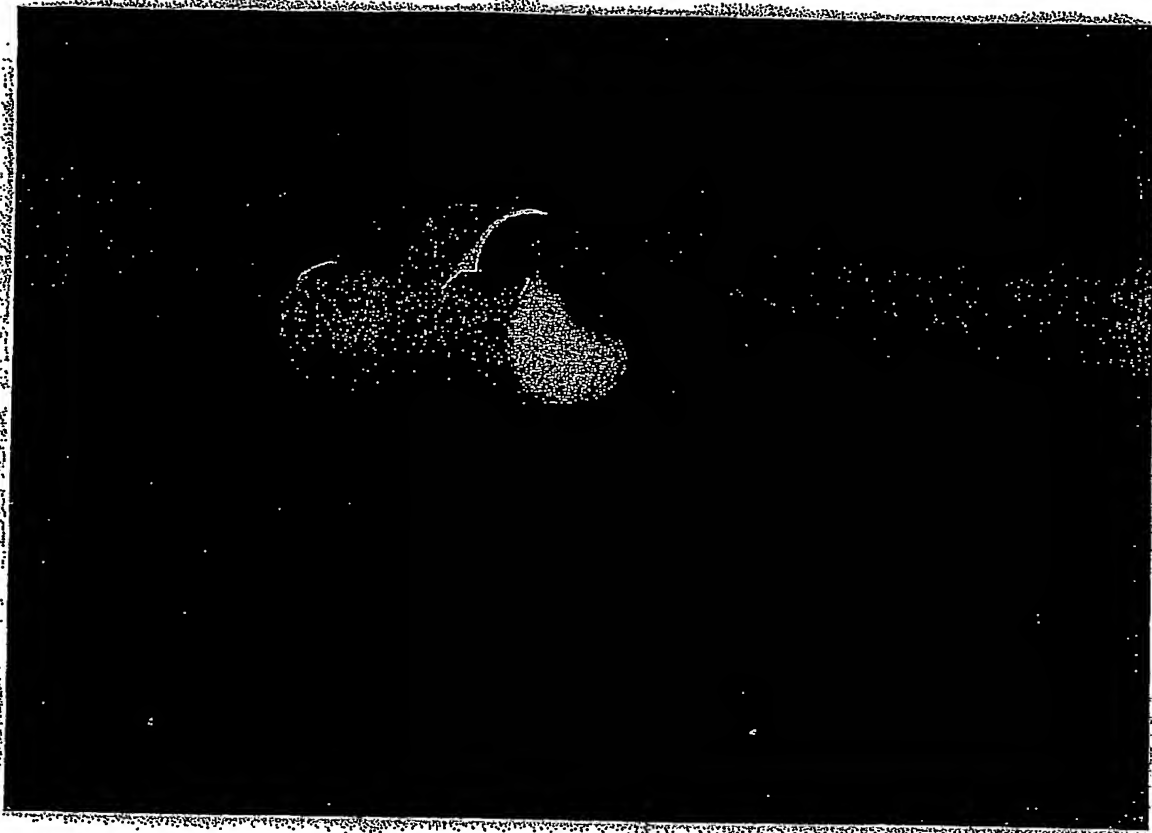

James H. Morris, Reg. No. 34,681
Telephone No.: 617-720-3500

Description of Eccentric Electrode

The "Eccentric Electrode Design" has a large tissue contact surface area. This surface area is larger than the blood contact surface area of the electrode. The objective of the larger tissue contact surface area is to produce deeper ablation lesions. In addition the electrode will minimize the mass in contact with the blood. The smaller mass will assure that minimal heating occurs along the blood contact surface. Two embodiments of the design are shown below.



60458489.032803



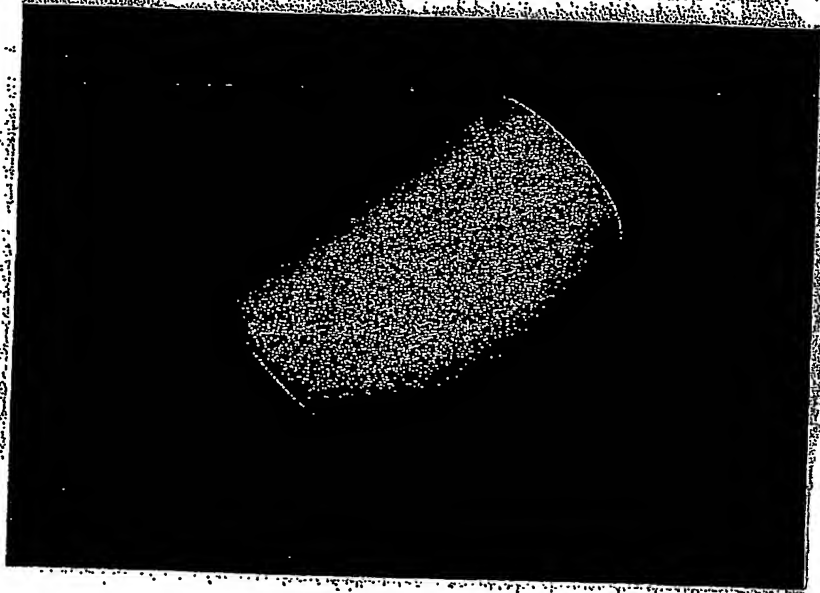
|||
 TITLE Eccentric Electrode

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William E. Stern-Wright

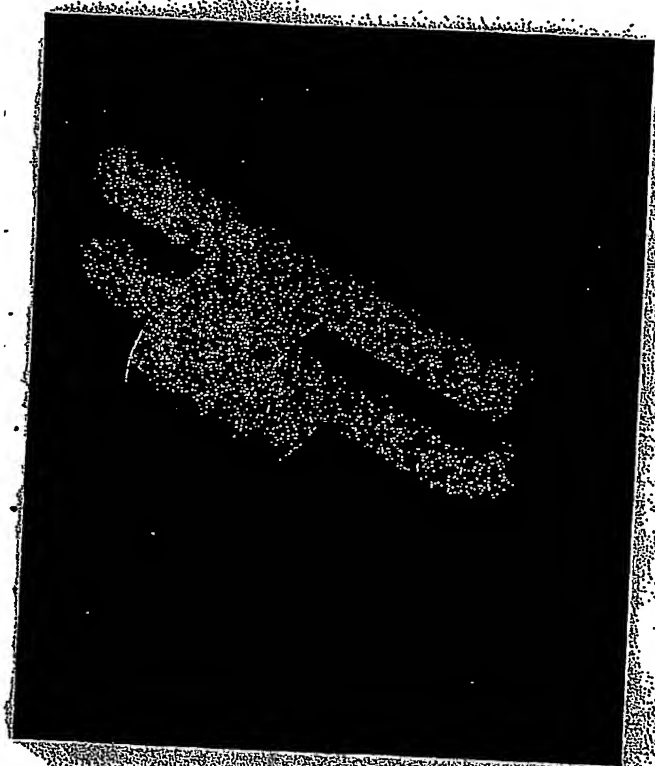


William E. Stern-Wright

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TITLE *Eccentric Electrode*

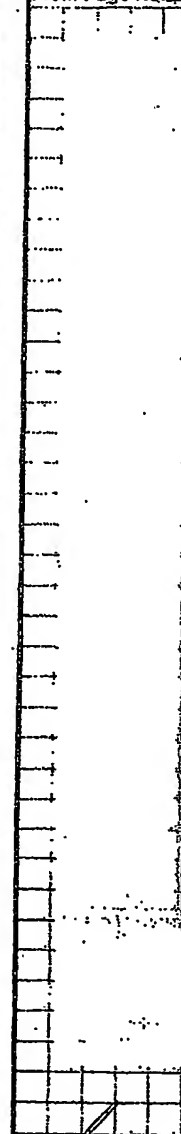
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Admission Standard - 10/1/1972

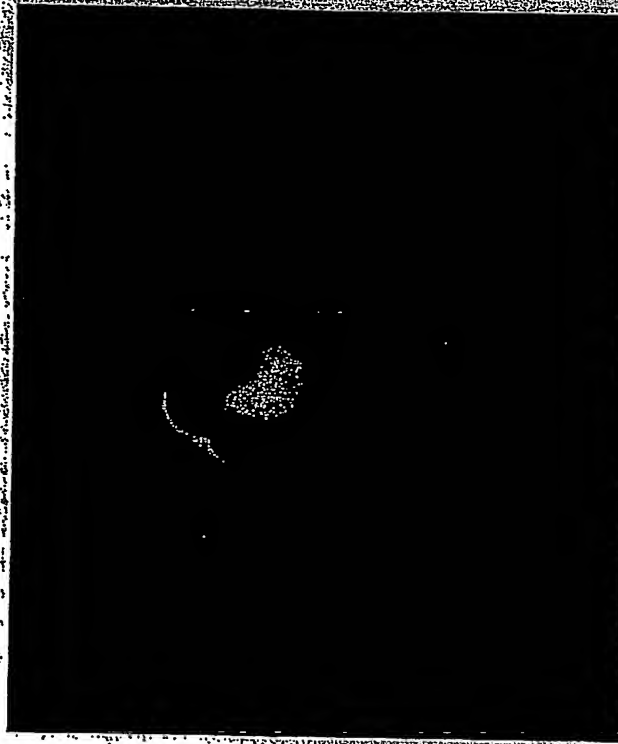
TITLE *Eccent*

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TITLE *Eccentric Electrode*

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Alpha E. Williams - Wright

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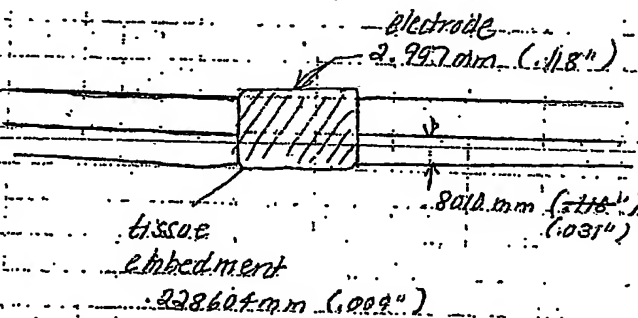
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TITLE Eccentric Electrode Design

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Analysis of eccentric electrode design shows that the convective flow across the tissue surface is improved with this design. This design helps to lift the catheter tubing away from tissue surface, thus improving blood flow across the tissue surface. This cooling allows more energy to be transferred into the tissue before reaching the maximum tissue temperature of 100°C . The chart below shows the relative improvement that this design offers over various other designs. The diagram below shows the offset for a 9F, 4mm electrode design.



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TITLE Eccentric Electrode Design

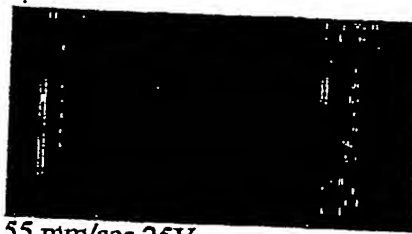
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Temperature and Velocity Profiles

9F Can Guppy 4mm - Temperature and Velocity Profiles



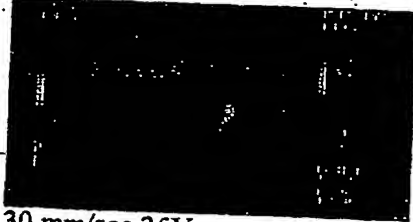
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55 mm/sec 25V



85 mm/sec 25V



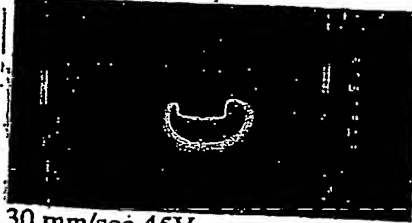
30 mm/sec 35V



55 mm/sec 35V



85 mm/sec 35V



30 mm/sec 45V



55 mm/sec 45V



85 mm/sec 45V

Dibble & Stevens Weigh

5 0 4 4 5 0 5 0 4 4 5 0 5

TITLE *Eccentric Electrode Design*

TITLE

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Comparative

Length									
3.5mm	9F Simplified Morgan	4.93		5.30		5.65			
3.5mm	9F Radiator	5.14	4.26	5.85	10.38	5.90	4.42		
3.5mm	9F Guppy (Slim Profile)	5.00	1.42	5.60	5.66	5.85	3.54		
3.5mm	12F Simplified Morgan	6.00	21.70	6.10	15.09	6.60	16.81		
3.5mm	11F Can	5.73	16.23	6.20	16.98	6.40	13.27		
4.0mm	9F Beehive	5.50	11.56	6.00	13.21	6.10	7.96		
4.0mm	9F Can	5.63	14.20	6.00	13.21	6.10	7.96		
4.0mm	9F Can Guppy	5.73	16.23	6.00	13.21	6.10	7.96		
4.0mm	9F Can Guppy Suspended	5.23	6.09	6.00	13.21	6.30	11.50		
4.0mm	9F Gear	5.48	11.16	5.98	12.83	6.25	10.62		
4.0mm	9F Big Fins	5.30	7.51						
5.00mm	9F Distal	5.60	13.59						
6.0mm	9F Can	5.90	19.68	6.50	22.64	6.60	16.81		
6.0mm	9F Beehive			6.50	22.64				
8.0mm	9F Simplified Morgan	4.91	-0.41	5.10	3.77				
8.0mm	9F Can	6.30	27.79	7.10	33.96	7.30	29.20		

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